What is claimed is:

1. A ring network for transporting data packets between network devices, the ring network comprising:

a number of ring switches, each ring switch having at least one ring port, at least one local port and at least one address table that self learns which network devices are associated with each port of the ring switch based on source addresses of packets processed by the ring switch;

the at least one ring port of each ring switch being coupled to a ring port of another ring switch in the ring network;

wherein the ring switch switches data packets between its ring and local ports to direct the data packets to specified network devices associated with the at least one local port of the ring switches in the ring network; and

wherein the ports of the ring switches are configured such that data packets received at the at least one ring port and the at least one local port that are not destined for a network device associated with the at least one local port of the ring switch are switched to another ring switch on the ring network based on the at least one address table without the use of a token or encapsulating the packet.

2. The ring network of claim 1, wherein the ring switches each include a ring-in and a ring-out port.

3. The ring network of claim 2, wherein the ring switches store source addresses for data packets received at the ring-in port of a ring switch in the at least one address table with an indication that data packets destined for the source address should be transmitted out the ring-out port of the ring switch.

4. The ring network of claim 1, wherein the ring switches each include a single, bi-directional ring port that allows data packets received at the bi-directional ring port to be retransmitted out the ring port of the switch so that data packets can be forwarded on to

other ring switches in the ring network without the use of a token or encapsulating the data packets.

5. The ring network of claim 1, and further including a number of ring transceivers coupled to form a ring, wherein the ring switches are coupled to the ring transceivers.

6. The ring network of claim 1, wherein the ring switches are coupled by conductors on a printed circuit board.

7. The ring network of claim 1, wherein the at least one local port for at least one of the ring switches includes at least one token ring port.

8. The ring network of claim 1, wherein the at least one local port for at least one of the ring switches includes at least one Ethernet port.

9. The ring network of claim 1, wherein the at least one local port for at least one of the ring switches includes at least one Fiber Distributed Data Interface (FDDI) port.

10. The ring network of claim 1, wherein the at least one local port for at least one of the ring switches includes at least one data transfer path.

11. The ring network of claim 10, wherein the at least one local port for at least one of the ring switches includes at least one PCI interface.

12. The ring network of claim 1, wherein each ring switch includes a circuit that removes incoming data packets that have a source address that corresponds to a network device associated with the local port of the switch.

13. The ring network of claim 12, wherein the circuit that removes the incoming

data packet includes:

a first-in, first-out buffer that tracks the source address of data packets received at the at least one ring port;

an external address table that stores the addresses of network devices associated with the local ports;

a first state machine that receives data packets for the at least one ring port of the switch and places the source address of the data packet into the first-in, first-out buffer when the source address is not in the external address table, and eliminates the data packet when the source address is in the external address table; and

a second state machine responsive to the first-in, first-out buffer and the external address table that receives data packets from the at least one ring port of the switch and that stores the source address of the data packet in the external address table when the data packet originated from a local port.

14. The ring network of claim 12, wherein the circuit that removes the incoming data packet includes:

an external address table that stores the addresses of network devices associated with the local ports;

first and second state machines responsive to the at least one ring port of the switch that compare source addresses for data packets entering the at least one ring port and exiting the at least one ring port to determine whether the data packets received at the at least one ring port originated from a local port.

15. The ring network of claim 14, wherein

the first state machine receives data packets for the at least one ring port of the switch, places the source address for the data packet in the external address table when the data packet did not originate from the local port of the switch and eliminates the data packet when the source address corresponds to an address of a network device associated with the local port; and

the second state machine receives data packets from the at least one ring port of the switch and places the source address of a data packet in the external address table when the data packet originated from a local port.

16. The ring network of claim 12, wherein the ring switches add an identifier signal with data packets originated at the at least one local port of the ring switch and the circuit removes data packets when the identifier signal for a data packet received at the at least one ring port corresponds to the identifier signal for the originating ring switch.

17. The ring network of claim 12, wherein the ring switches add a counter signal to data packets originated at the ring switch, which counter signal is incremented at each subsequent ring switch that processes the data packet, and the circuit removes data packets when the counter signal reaches a selected level.

18. The ring network of claim 1, wherein the ring switches each include a single address table for identifying the addresses of network devices associated with the at least one ring port and the at least one local port of the ring switch.

19. A ring switch for a ring network, the ring switch comprising:

at least one ring port that is coupleable to transport data packets in a ring network;

at least one local port that is coupleable to at least one local area network or device;

at least one address table that tracks the addresses of network devices associated with each port of the ring switch based on source addresses of data packets received at the ports of the ring switch; and

wherein data packets received at the at least one ring port that are not destined for a network device associated with any of the at least one local ports of the ring switch are switched to another ring switch coupled to the at least one ring port based on the at

least one address table without the use of a token or encapsulating the packet.

20. The ring switch of claim 19, wherein the ring switch includes a circuit that uses the source address of data packets entering a ring-in port to create entries in the at least one address table for a ring-out port for use in switching data packets.

21. The ring switch of claim 19, wherein the at least one ring port of the ring switch comprises a single, bi-directional ring port that allows data packets received at the ring port to be retransmitted out of the ring port to other ring switches.

22. The ring switch of claim 19, and further comprising a circuit associated with the at least one ring port that removes incoming data packets that have a source address that corresponds to a network device associated with any of the at least one local ports of the switch.

23. The ring switch of claim 19, wherein the circuit includes at least one state machine associated with the at least one ring port that compares the source addresses of data packets entering and exiting the at least one ring port to determine when a data packet with an address associated with one of the at least one local ports is received at the ring port.

24. The ring switch of claim 19, wherein the circuit uses a counter to determine when the data packet should be removed from the ring.

25. The ring switch of claim 19, wherein the circuit uses an identifier signal associated with the ring switch to remove data packets that originated from a local port of the ring switch.

26. The ring switch of claim 19, wherein at least one of the local ports is configured

as an Ethernet port.

27. A ring switch for a ring network, the ring switch comprising:

a bi-directional ring port that is coupleable to receive data packets from and transmit data packets over a ring of ring switches;

at least one local port that is coupleable to at least one local area network;

at least one address table that self learns and stores the addresses of network devices associated with the at least one bi-directional ring port and the at least one local port based on source addresses from data packets processed by the ring switch;

wherein the ring switch allows data packets received at the ring port to be retransmitted out the ring port of the switch so that data packets can be forwarded on to other ring switches in the ring network based on the at least one address table without the use of a token or encapsulating the packet; and

a circuit associated with the bi-directional ring port that removes incoming data packets that have a source address that corresponds to a network device associated with the at least one local port of the switch.

28. The ring switch of claim 27, wherein the circuit includes first and second state machines associated with the bi-directional ring port that compares the source addresses of data packets entering and exiting the bi-directional ring port to determine when a data packet with an address associated with one of the at least one local ports is received at the ring port.

29. The ring switch of claim 27, wherein the circuit uses a counter to determine when the data packet should be removed from the ring.

30. The ring switch of claim 27, wherein the circuit uses an identifier signal associated with the ring switch to remove data packets that originated from a local port of the ring switch.

31. The ring switch of claim 27, wherein at least one of the at least one local ports is configured as an Ethernet port.

32. A ring switch for a ring network, the ring switch comprising:

a ring-in port that is coupleable to receive data packets from the ring network;

a ring-out port that is coupleable to provide data packets to the ring network;

at least one local port that is coupleable to a local area network;

at least one address table to track the addresses of network devices associated with the ports of the ring switch; and

wherein the address table associates the addresses of network devices with the ring-out port when data packets are received at the ring-in port.

33. The ring switch of claim 32, and further comprising a circuit associated with the ring-in port that removes incoming data packets that have a source address that corresponds to a network device associated with the at least one local port of the switch.

34. The ring switch of claim 33, wherein the circuit includes first and second state machines associated with the ring-in and ring-out ports, respectively, that compares the source addresses of data packets entering the ring-in port and exiting the ring-out port to determine when an packet with an address associated with one of the at least one local ports is received at the ring port.

35. The ring switch of claim 33, wherein the circuit uses a counter to determine when the packet should be removed from the ring.

36. The ring switch of claim 33, wherein the circuit uses an identifier signal associated with the ring switch to remove packets that originated from a local port of the ring switch.

37. The ring switch of claim 33, wherein the at least one local port includes a local port configured as an Ethernet port.

38. A method for building an address table for a port of a ring switch in a ring network, the method comprising:

receiving a data packet at a first port of the ring switch;

reading the source address from the data packet; and

storing the source address in an address table for the ring switch that indicates that the data packet originated from a network device associated with a second, different port of the switch so as to allow unidirectional transmission on the ring network.

39. The method of claim 38, wherein the step of reading a source address comprises the step of reading a source address from an Ethernet packet.

40. The method of claim 38, wherein the step of storing the source address in an address table comprises the step of storing the source address for the data packet in a single address table with a multi-bit signal indicating the port associated with the source address.

41. A method for removing data packets from a ring network, the method comprising the steps of:

receiving a data packet at a ring port of a ring switch of the ring network;

reading the source address from the data packet;

comparing the source address with the at least one address table of the ring switch, wherein the at least one address table indicates which addresses are associated with each port of the switch; and

when the source address corresponds to a network device that is associated with a local port of the switch, discarding the data packet.

42. The method of claim 41, wherein the step of receiving a data packet comprises the step of receiving an Ethernet packet.

43. The method of claim 41, wherein the step of comparing the source address with the at least one address table comprises the step of comparing the source address with more than one address table for ports of the ring switch.

44. A method for processing data packets in a ring switch of a ring network, the method comprising:

receiving a data packet at a bi-directional ring port of the ring switch;

reading the source address of the data packet;

when the source address is not in an address table for a port of the ring switch, storing the source address in at least one address table with an indication that the address is for a network device associated with the ring port;

reading a destination address from the data packet;

when the destination address for the data packet is in an address table for the ring switch, switching the data packet to the port of the ring switch that is associated with the destination address, even if the data packet was received at the ring port and the destination address is associated with the ring port without using a token or encapsulating the data packet;

when the destination address for the data packet is not in an address table for the ring switch or the data packet is a broadcast data packet, broadcasting the data packet to all ports of the ring switch; and

when the destination address for the data packet is a multicast address, broadcasting the data packet to all appropriate ports of the ring switch.

45. The method of claim 44, and further comprising the step of removing the data packet from the ring network when the source address is in the address table with an indication that the network device is associated with a local port.

46. The method of claim 44, and further comprising the step of removing the data packet from the ring network when a counter associated with the data packet reaches a selected value.

47. The method of claim 44, and further comprising the step of removing the data packet from the ring network when the data packet includes an identification signal that indicates that the data packet originated from a local port of the ring switch.

48. A method for processing data packets in a ring switch of a ring network, the method comprising:

receiving a data packet at a ring-in port of the ring switch;

reading the source address of the ring packet;

when the source address is not in an address table for a port of the ring switch, storing the source address in the address table with an indication that the address is for a network device associated with a ring-out port of the ring switch;

reading a destination address from the data packet;

when the destination address for the data packet is in an address table for the ring switch, switching the data packet to the port of the ring switch that is associated with the destination address;

when the destination address for the data packet is not in an address table for the ring switch or the data packet is a broadcast data packet, broadcasting the data packet; and

when the destination address for the data packet is a multicast address, broadcasting the data packet to all appropriate ports of the ring switch.

49. The method of claim 48, and further comprising the step of removing the data packet from the ring network when the source address is in the address table with an indication that the network device is associated with a local port.

50. The method of claim 48, and further comprising the step of removing the data packet from the ring network when a counter associated with the data packet reaches a selected value.

51. The method of claim 48, and further comprising the step of removing the data packet from the ring network when the data packet includes an identification signal that indicates that the data packet originated from a local port of the ring switch.